



ICAO ENGINE nvPM EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: AS907-3-1E-A1 (HTF7500E) BYPASS RATIO (-): 4.2
 UNIQUE ID NUMBER: 01P14HN014 PRESSURE RATIO π_{co} (-): 21.1
 COMBUSTOR: SABER-1
 ENGINE TYPE: MTF RATED OUTPUT F_{oo} (kN): 29.4

REGULATORY DATA

CHARACTERISTIC VALUES:	LTO_{mass}/F_{oo} (mg/kN)	LTO_{num}/F_{oo} (particles/kN)	NVPM MASS CONCENTRATION ($\mu\text{g}/\text{m}^3$)
LTO/ F_{oo} AND MAX $nvPM_{mass}$	665.0	7.36E+15	1829
AS % OF CAEP/10 LIMIT	-	-	13.0
AS % OF CAEP/11 LIMIT (InP)	16.6	31.5	
AS % OF CAEP/11 LIMIT (NT)	63.5	58.7	

MEASURED DATA

MODE	POWER SETTING (% F_{oo})	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES*		NVPM MASS CONCENTRATION PEAK $nvPM_{mass}$ ($\mu\text{g}/\text{m}^3$)
				EI_{mass} (mg/kg)	EI_{num} (particles/kg)	
TAKE-OFF	100	0.7	0.320	304.3	1.94E+15	
CLIMB OUT	85	2.2	0.267	255.6	2.20E+15	
APPROACH	30	4.0	0.097	4.8	2.47E+14	
IDLE	7	26.0	0.048	11.4	6.16E+14	
LTO TOTAL (kg, mg, number of particles)			147	14066	1.56E+17	-
NUMBER OF ENGINES				1	1	1
NUMBER OF TESTS				4	4	4
AVERAGE LTO/ F_{oo} VALUES (mg/kN, particles/kN)				478.4	5.29E+15	-
MAX EI VALUES (mg/kg, particles/kg) AND MAX MASS CONC. ($\mu\text{g}/\text{m}^3$)				304.3	2.20E+15	1421

* Emissions Indices are corrected for thermophoretic loss and fuel hydrogen content

DATA FOR EMISSIONS INVENTORIES (ESTIMATIONS FOR ENGINE EXIT PLANE VALUES)

MODE	POWER SETTING (% F_{oo})	CORRECTED EMISSIONS INDICES	
		$EI_{mass_{sl}}$ (mg/kg)	$EI_{num_{sl}}$ (particles/kg)
TAKE-OFF	100	359.1	5.55E+15
CLIMB OUT	85	308.2	6.98E+15
APPROACH	30	8.2	1.97E+15
IDLE	7	20.7	5.47E+15

AMBIENT CONDITIONS

	From	To	FUEL	
BAROMETER (kPa)	96.6	97.5	HEAT OF COMBUSTION (MJ/kg)	43.05
TEMPERATURE (K)	289.0	300.0	HYDROGEN CONTENT (%mass)	13.66
HUMIDITY (kg water/kg dry air)	0.0020	0.0030	AROMATICS CONTENT (%vol)	16.7
			NAPHTHALENE CONTENT (%vol)	1.24
			SULPHUR CONTENT (ppm by mass)	744

MANUFACTURER: Honeywell
 TEST ORGANIZATION: Honeywell
 TEST LOCATION: Queen Creek, AZ
 TEST DATES: 04/12/2015-07/12/2015

REMARKS

- Reference: Honeywell Report 21-16865 Summary Report: Compliance to International Regulations of Non-Volatile Pa: